Managing marine data: Atlas of marine biodiversity in the Balearic Sea, Western Mediterranean

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The **Atlas of marine biodiversity in the Balearic Sea** is a digital atlas of marine species covering a sea area of 150.000 km^2 and integrating a wide array of taxonomic groups: 33 phylum, 615 families, 1058 genus and 1600 Mediterranean marine species in the Balearic islands.

This is the first marine atlas of Mediterranean species with relevant data on endemic, protected and exploited species of valuable interest for marine biodiversity knowledge.

This GIS geoportal represents a useful tool for decision making processes for coastal management, ranging from recreational uses, marine protected areas, fisheries, industry and conservation purposes.

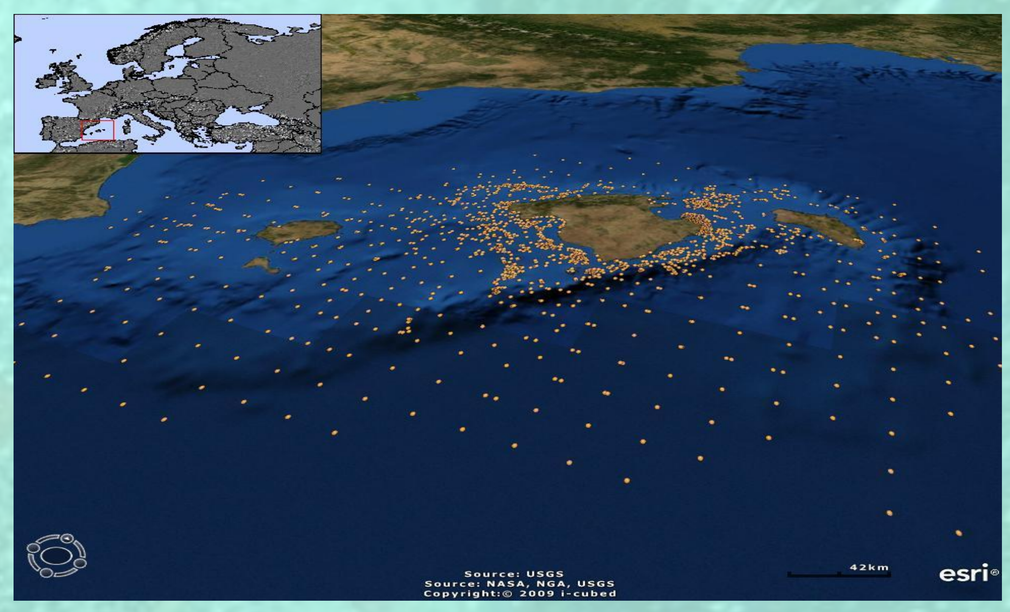
PROCESS

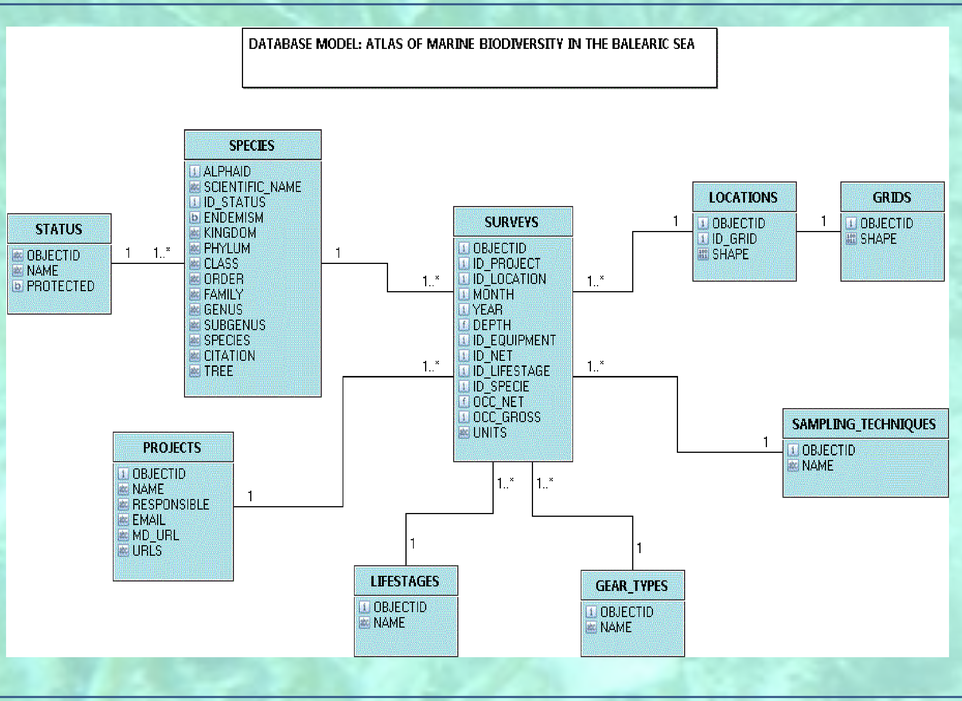
Collecting and structuring information

Data have been collected from research projects and oceanographic surveys carried out by the COB (Centre Oceanogràfic de les Balears) in the Balearic islands and it covers a long period of time.

The oldest data was recorded in 1972 and the last one in 2010. Some data series covers a long period of time (up to 10 years) and others only a specific moment of a survey.

The project covers all the Balearic Sea. Most of the data is located along the coast, especially in Mallorca island, and the number of records decreases as long as we move away from the coast.





Data Model

An Oracle database was used for the alphanumeric data and ESRI ArcSDE was used as a middleware to manage spatial information.

A data model has been build comprising 87000 registers from 1600 marine species covering from foraminifera, sponges, algae, crustaceans, phytoplankton, to fishes among others.

Its structure allows the integration of new data coming from new projects or surveys in the future.

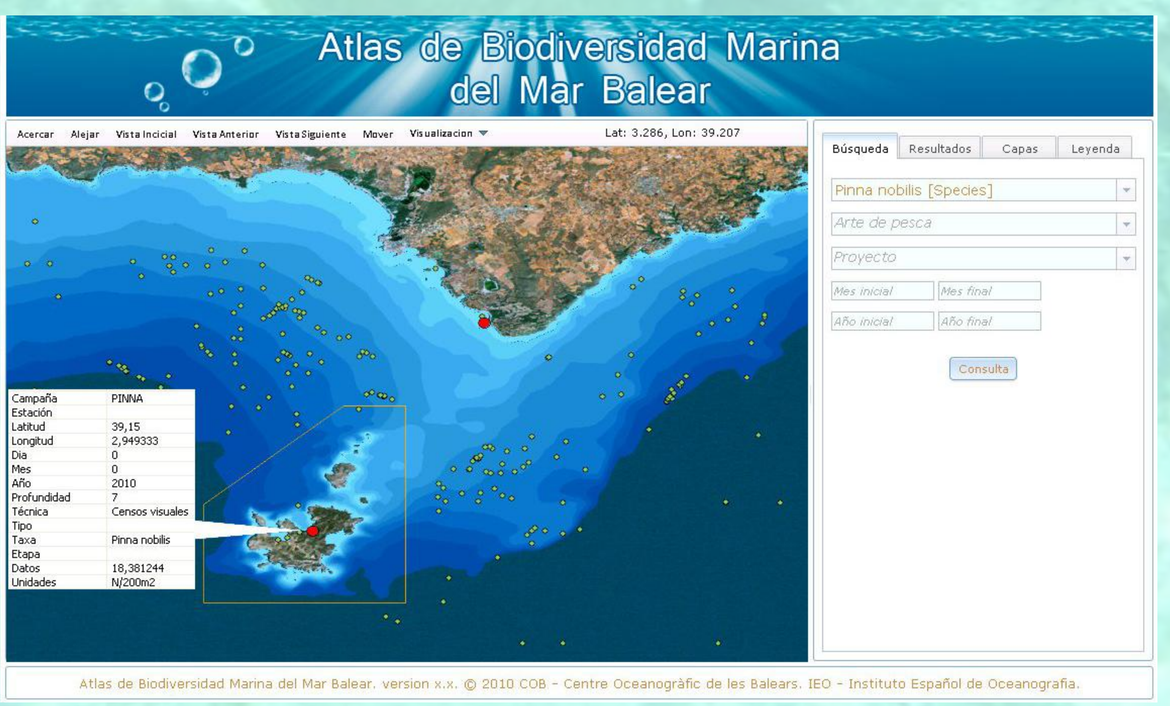
Thematic information was also loaded: bathymetric map, physical elements (substrate, salinity...), political boundaries (fishing areas, protected areas...)... This data is important for the Map Viewer in order to contextualise the study area.

Spatial Data Infrastructure

A Web Map Server has been set up using ESRI ArcGis Server. It allows the publication of REST services and WMS services for being consumed by native ESRI web applications or other clients. These standards allow us to expose the data stored in the database to external applications.

The user can search for specific specie or taxon and other parameters like month, year, depth, method of sampling, stage, project, etc...The results are displayed individually (points) and aggregately (a grid that represents the abundance of the results either species or taxa).

We have implemented a web catalogue interoperable through CSW OGC standard for catalogues and following the INSPIRE directive specifications.



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